

**Notice of Allowability**

Application No.

10/710,260

Examiner

Faye Boosalis

Applicant(s)

LEE ET AL.

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to submission of 22 September 2006.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_;
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE**

### ***Comment on Submissions***

1. This communication is responsive to submissions 22 September 2006.
2. Amendments to the Specification are accepted.

### ***Allowable Subject Matter***

3. Claims 1-20 are allowed.
4. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1, the prior art does not disclose or fairly suggest an optical sensor package comprising: a window located at the second surface so that infrared radiation passes through the wall of the substrate, through the cavity, and then to the optical sensing element.

The examiner notes that while it is known in the art of an optical system package comprising: a substrate in which a cavity is defined, a second surface opposite the first surface (12), and a wall (28) between the cavity (26) and the second surface, at least a portion of the substrate being formed of silicon; a membrane (14) bonded to the substrate and spanning the cavity (26) in the substrate (see for example Jack et al – US 5,689,087 A -- Fig. 1d and col. 3, lines 1-67, col. 4, lines 1-5, lines 36-50, lines 56-67 and col. 5, lines 1-4 and lines 10-14). The cavity (26) is only present during processing of the optical system package and the final package is completely filled with a radiation-absorbing region (28), formed of (multilayered Ti/Zn/Se structure) (col. 4, lines 51-60), the prior art does not suggest a backside illumination of an optical sensor package in

Art Unit: 2884

which a cavity exists wherein radiation passes through the wall of the substrate, through the cavity, and then to the optical sensing element.

Regarding independent claim 14, the prior art does not disclose or fairly suggest an infrared sensor package comprising: a window located at the second surface so that infrared radiation passes through the wall of the substrate, through the cavity, and then to the thermopile sensing element.

The examiner notes that while it is known in the art of an infrared sensor package comprising: a substrate (12) having a first surface in which a cavity (26) is defined, a second surface opposite the first surface (12), and a wall (28) defined between the cavity (26) and the second surface, at least a portion of the substrate being formed of silicon; a membrane (14) bonded to the substrate and spanning the cavity (26) in the substrate (12); a thermopile sensing element (20) (22) (24) on the membrane (14); and integrated circuitry (16) on the substrate, the integrated circuitry performing logic functions and signal processing for the thermopile sensing element (20) (22) (24) (see for example Jack et al – US 5,689,087 A -- Fig. 1d and col. 3, lines 1-67, col. 4, lines 1-5, lines 36-50, lines 56-67 and col. 5, lines 1-4 and lines 10-14). The cavity (26) is only present during processing of the infrared sensor package and the final package is completely filled with a radiation-absorbing region (28), formed of (multilayered Ti/Zn/Se structure) (col. 4, lines 51-60), the prior art does not suggest a backside illumination of an optical sensor package in which a cavity exists wherein radiation passes through the wall of the substrate, through the cavity, and then to the thermopile sensing element. The remaining claims 2-13 and 15-20 are allowable based on its dependency.


**Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Boosalis whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**OTILIA GABOR**  
**PRIMARY EXAMINER**